LABOUR USE AND PRODUCTIVITY OF SOME IRRIGATED CROPS IN EAST PAKISTAN

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INTRODUCTION

Labour is an important part of the cost of producing farm products. The proportion varies with the product, the season and the farmer. In most of the developing countries labour constitutes about fifty percent of the total cost of production of farm products and most of it is the unpaid labour of the farmer and his family. "Labour, therefore, is the farmers greatest contribution to agricultural production. What happens to it, how it is utilized or wasted, how much it costs and above all, what is left over to pay for it are matters of great concern to him. The amount of pay the farmer receives for his years work of operating the business is one of the most important measures of the farm's economic success. Efficiency in the use of labour is also one of the most important factors affecting that success. It is one of the important reasons why two farms equally good may return different incomes."[1]

Labour as a cost is made up of the physical hours of work applied and the rate of wage per hour of which both are variable and are avenues through which labour cost and the proportion it represents to total cost can be effected.[2] Labor cost can be reduced either by reducing the rate of wage paid or by reducing the number of labourers at work or by using the labourers at work for greater number of hours at the same wage rate or by increasing the area of land and crop per labourer employed. Reduction of the number of labourers for reducing labour cost is possible by substituting machine for labour. In most of the developing countries, especially the densely populated ones, where agricultural labourers are under-employed, introduction of machine for improving labour efficiency will be a self-defeating innovation because introduction of machine will create unemployment if alternative job opportunities are not available and increased return due to the machine will be offset by the decrease in return due to unemployment resulting in no net gain. Innovation to improve labour efficiency need not be regarded entirely as labour saving devices involving expensive power units or complex machines. "Increased labour efficiency is associated with increased size of business, either more crops or more animals or both. This is more than an implication that increased size of business is a cause of increased labour efficiency-it is a fact. Very few of the relatively large farm businesses have low labour efficiency and very few of the small ones have very high labour efficiency."[3]

In most developing countries "Labour may frequently be used directly for intensifying production from the existing land and capital resources, by more liberal use in seed bed preparation, application of water, weeding and harvesting and it may also be used to increased production by direct capital formation through land reclamation, digging of wells and land leveling. In the initial stages of a shift to a dynamic agriculture, labour is again of critical importance because many technological innovations require added labour."[4]

In East Pakistan apart from the unfavorable physical and climatic factors, the inelastic nature of cropping and cultivation and the existing rigid routine of production renders labour idle for some seasons of the year, but requires the whole of it during the peak seasons like weeding, planting and harvesting. On an average, the agricultural labourers here are employed at very low level of productivity. "Under-employment of agriculture's human resources is virtually universal. The average cultivator is employed about 120 days per year. This situation will worsen materially as rural population increases unless measures are taken to more fully utilize the available land and water resources and also to create additional employment through development of local industry."[5]

Study Results

Provision of irrigation facilities in East Pakistan has made possible to bring the previously unutilized land under plough in the rabi seasons thereby increased both intensity of land use and cropping and has given opportunity of better utilizing the previously under-employed farm labour. "The pattern of expenditure does reflect the fact that Comilla farms (having irrigation facilities)" have been successful to some extent in molding the pattern of farming more towards a year round work programme which is not there in the same extent in Chandina (having no irrigation facilities)."[6]

The great direct economic benefit from the adoption of irrigation in Kalyanpur[7] was the increase in productive activities in agriculture. In the first year 12.3% of the total crop land was under irrigated boro and total cropped area increased by 14% which enabled the farmers to become gainfully employed round the year. It was particularly helpful to the landless labourers who could accept hire when they would otherwise have been largely unemployed.

Labour accounted for 55.94%, 54.21%, 45.68%, 44.24% and 37.80% of the total gross cost in the production of irrigated IRRI[8], IRRI produced with local boro[9], local boro produced with IRRI[10], only local boro paddy[11], and potato[12] respectively of which 28.34%, 31.37%, 25.81%, 37.07% and 24.20% was home supplied (Table 1). Although IRRI paddy produced with local boro yielded the highest net return, return per hour of labour was the highest in case of potato and local boro produced with IRRI among paddy enterprises. This difference was due to differences in the use of labour. Local boro produced with IRRI used about half the labour utilized by farms producing IRRI with local variety. Return per hour of labour varied from Rs. 0.09 on one farm producing only local variety to Rs. 1.16 on one farm producing local variety with IRRI.[13]

Weeding was the highest consumer of labour hours on both kinds of IRRI fields. On farms producing both the types of local varieties of boro paddy, transplanting accounted for the highest consumer of labour and on farms producing potato, irrigation was the highest consumer of labour time-the figures were 27.11%, 16.68%, 25.29%,

23.46% and 20% for IRRI, IRRI with local boro, local boro with IRR, only local boro and potato respectively (Table 2). In potato fields irrigation took much of the labour time because 30 out of 50 farms studied used indigenous system of irrigation. Among paddy enterprises, farms producing only local variety used maximum labour hours on irrigation. Bird watching was a special feature with both the kinds of IRRI farm employing 4.79% and 8% of the total labour hours. Since there was a considerable difference among crop enterprises in the use of total labour hours, a higher percent of total on one kind of farm involved a lower number of physical hours than on the other kinds of farms.

Conclusion

Under the present circumstances, a technology compatible with the possibility of creating job opportunities for the underemployed agricultural labourers in East Pakistan is more important than maximizing labour return or improving labour saving techniques. Provision of irrigation facilities has created that opportunity while at the same time ensured a positive net return to labour.

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14-17. *Ibid*., pp. 87-89.
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Table 1: Average Farm Labour Costs and Returns per Acre in the Production of Some Irrigated Crops

Item	IRRI		IRRI[a]		Local Boro[b]		Local Boro		Potato	
	Qty.	Value, Rs.	Qty.	Value, Rs.	Qty.	Value, Rs.	Qty.	Value, Rs.	Qty.	Value Rs.
Family Labor, hrs.	662.64	249.69 (28.34)	700.00	260.19 (31.37)	340.43	125.02 (25.81)	609.68	234.44 (37.07)	664.88	249.11 (24.20)
Hired Labor, hrs.	777.01 –	243.22 (27.60)	613.51 –	189.42 (22.84)	310.28 –	96.25 (19.87)	158.54 –	45.38 (7.17)	367.92 –	139.46 (13.60)
Total Labor, hrs.	1439.65 –	492.91 (55.94)	1313.51 –	449.61 (54.21)	650.71 –	221.27 (45.68)	768.22 –	279.82 (44.24)	1032.80 –	388.97 (37.80
Average Cost/hr.	–	0.35	–	0.34	–	0.34	–	0.37	–	0.38
Yield, mds.	53.45	–	52.85	–	29.83	–	27.60	–	85.54	–
Net Return/Acre	–	423.50	–	463.20	–	289.68	–	74.35	–	362.91
Return/hr. Labor	–	0.64	–	0.69	–	0.78	–	0.46	–	0.97

The figure in the parentheses indicates percent to total gross cost of production.
(a) Produced on farms also producing local variety.
(b) Produced on farms also producing IRRI variety.

Table 2: Operation-wise Distribution of Labour (hrs.) Utilized per Acre in Different Crops

Operations	IRRI[14]	IRRI*[15]	Local†[16]	Local[17]	Potato[18]
Land Preparation	160.88 (11.17	149.99 (11.41)	119.30 (18.36)	141.14 (18.38)	176.88 (17.10)
Manuring & Fertilizing	85.64 (5.95)	95.28 (7.26)	67.63 (10.39)	52.08 (6.78)	104.96 (10.20)
Transplanting/Planting	221.26 (15.37)	200.65 (15.28)	164.04 (25.29)	180.21 (23.46)	184.32 (17.80)
Weeding/Hilling	390.23 (27.11)	219.06 (16.68)	36.76 (25.65)	25.00 (3.25)	168.48 (16.20)
Irrigation	160.92 (11.19)	144.95 (11.04)	72.18 (11.09)	155.21 (20.20)	200.32 (20.00)
Spraying	35.65 (2.47)	22.96 (1.74)	6.08 (0.93)	6.25 (0.81)	14.08 (1.40)
Bird Watching	69.00 (4.79)	105.05 (8.00)	– –	– –	– –
Harvesting	124.14 (8.38)	137.78 (10.49)	88.27 (13.57)	166.66 (15.19)	157.04 (15.2)
Threshing	120.69 (8.38)	128.66 (9.79)	35.78 (5.59)	35.42 (4.61)	– –
Winnowing/Cleaning and Storing	71.26 (4.95)	109.13 (8.31)	60.47 (9.22)	56.25 (7.32)	20.32 (2.00)
Total	1439.65 (100)	1313.51 (100)	650.71 (100)	768.22 (100)	1032.80 (100)

The figures in the parentheses indicate per cent to total.

†produced on Farms also producing IRRI variety.

* produced of Farms also producing local variety.